Teri presentation on regulatory body

NEW DELHI, Oct. 5. — With the Prime Minister, Dr Manmohan Singh, asking for regulatory bodies in most sectors, Tata Energy Research Institute (Teri) today arranged for the first presentation on the issue for the deputy chairman of the planning commission, Dr Montek Singh Ahluwalia and other senior officials.

After the presentation, the deputy chairman asked Teri for a status paper on regulatory mechanisms in major countries and an explanatory note on the power sector. Senior officials from the ministries of power, civil aviation, roads and ports were present at the meeting today. With the success of the telecom sector, the government is looking for more bodies like the Telecom Regulatory Authority of India. But several issues like the presence of government officials in the regulatory authorities and their relationship with the government, need to be clarified. — SNS

BIOFERTILISER WITH WIDE APPLICATIONS DEVELOPED

A Global First From Teri Stable

SUDHIR CHOWDHARY
New Delhi

In a major technological breakthrough, researchers at The Energy and Resources Institute (Teri) have developed a technology—a global first—to mass-produce a consortium of mycorrhiza (microscopic fungal microbe) biofertiliser. The biofertiliser, patented by Teri, acts multipurpose and multi-faceted—it is a soil conditioner, bio-remediator and bio-control agent and has wide applications in agriculture, economic plantations, horticulture, forestry and bio fuels.

The technique has been adopted by two leading pharma and agro-based companies, Cadila Pharmaceuticals Ltd, Ahmedabad, and KCP Sugars and Industries, Hyderabad. Teri is now set to transfer this technology overseas. It will soon sign an agreement with a Canadian biotechnology firm for technology transfer and contract research.

There's more, said Dr Alok Adholeya, head of the research team at Teri's Bioresources and Biotechnology division. "The technology has shown immense potential in reclamation of stressed ecosystems like fly ash dumps, alkali chlor sludge, distillery effluent loaded site and other man-made wastelands."

[illegible]

- **Teri researchers develop fungi-based biofertilizer**
- **It has applications in agriculture, horticulture and forestry**
- **Enhances nutrition and yield increment up to 50 per cent**
- **Technology transferred to two Indian firms for production**
- **Agreement with Canadian firm for tech transfer planned**

Recently, President Dr APJ Kalam conferred on Dr Adholeya the ministry of science and technology's biotech product and process development and commercialisation award for 2004 for his research on mycorrhiza technology.

Dr Adholeya told jieFEjr: "Our research focused on the mass-cultivation of a consortium of mycorrhiza (arbuscular mycorrhiza or AM) on semi-synthetic medium under sterile environments. Though mycorrhiza is a naturally-occurring fungi found in most soil types, excessive and incessant use of chemical fertilisers, insecticides, etc, has had an adverse effect on this organism."

"Unregulated use of these, over the years, has deteriorated the natural regeneration ability of soil and degraded its soil structure, the environment and therefore, food quality. As a result, agriculture-intensive economies suffer from saturated and polluted soil, and wastelands amidst an ever-increasing demand for food production," he added.

Teri's mycorrhizal consortium is a technological innovation, Dr Adholeya said, with multiple organisms as against its earlier version that contained a single species. The consortia technology offers improved and multi-faceted benefits in plant production systems. "Field trials have revealed that it enhances nutrition and yield increment up to 50 per cent and curtails chemical fertiliser inputs by 5-25 per cent," he said.

Mycorrhiza has also proven, through field trials conducted by Teri, that fly ash dumps, mined out areas, sites affected by industrial affluent, oil refineries and chlor alkali sludge can be reclaimed for vegetation.

Continued on Page III

Continued from Page I

"Heavily loaded sites—the Badarpur Thermal Power Station, Delhi, the Korba Super Thermal Power Station, Chhattisgarh, and the Vijayawada State Thermal Power Station have been completely cured," he said.

According to Dr Adholeya, reclaiming one hectare of fly ash dump using Teri technology costs Rs 90,000. This includes the cost of field preparation, nursery raising, mycorrhiza innoculation, grass bed preparation and maintenance up to one year.

Trai, Teri Join Hands To Develop Software For Vetting Tariff Plans

OUR eFE BUREAU
New Delhi

The Telecom Regulatory Authority of India (Trai) is working closely with The Energy Research Institute (TERI) to develop a software that might put an end to customers' problems regarding tariff plans.

"We have been working with TERI on a software, and now we are testing it. This software will help customers choose the best tariff plan," Trai member DPS Seth told newspersons on the sidelines of the Trai open-house session on Spectrum.

He added that the authority is evolving a mechanism, which will answer questions like who will pay for the software and how much; when and how to launch the software; who will operate the software, etc.

The software will help consumers decide on a tariff plan depending on the amount of money and calls a user would like to go in for.

The recent tariff cuts and multiple announcements made by telecom operators have left consumers quite confused. This software might put an end to the confusion, he said.

Mr Seth said that Trai permits an operator to offer a maximum of 25 tariff plans.

Recently many operators have announced new tariff plans across pre-paid and post-paid, especially at the entry level.

◆

Carbon dioxide concentration in atmosphere unprecedented: expert

By Our Staff Reporter

HYDERABAD, SEPT. 11. Carbon dioxide concentrations in the atmosphere today are perhaps the highest in the last 20 million years, the director general of the Delhi-based The Energy and Resources Institute, R.K. Pachauri, has said.

This unprecedented concentration of greenhouse gases (GHG) has led to the 1990s being, perhaps, the warmest decade globally. Even in 2003, high temperature records were broken all around the globe. London witnessed the first three digit Fahrenheit temperature and about 15,000 people died in France due to temperatures that have not been seen since 1873.

Last year in Andhra Pradesh, the heat wave that started on May 16 continued for an unprecedented 27 days, with temperatures averaging 46 and 47 degree Celsius. The average summer temperature is about five degrees lower and heat wave normally lasts only a week or so.

More dog days

Globally, the number of hot days has increased, continental precipitation has risen by five to 10 per cent and glaciers and snow covers are reducing at a rapid rate. The frequency of natural disasters such as cyclones, floods and droughts has increased, as is evident to anyone following the news, said Dr. Pachauri.

More such natural disasters are likely to occur in the coming decades, with the average global temperatures projected to rise anywhere between 1.4 and 4.5 degrees Celsius in the present century.

The "inertia" of climate change means that the GHG will remain in the atmosphere for at least a few centuries to come. Climate change is "inevitable," Dr. Pachauri said. "We can perhaps control the magnitude of climate change and its speed."

For that to happen, there must be deep cuts in GHG emissions, he said. The massive rise in GHG has been a consequence of human activity in the last two centuries, with fossil fuels accounting for about 80 per cent of GHG emissions. There is little evidence that this trend is slowing, far less reversing. Transport in India is shifting from railways to roads and from public carriers to private vehicles, leading to an exponential rise in the use of fossil fuels and GHG emissions.

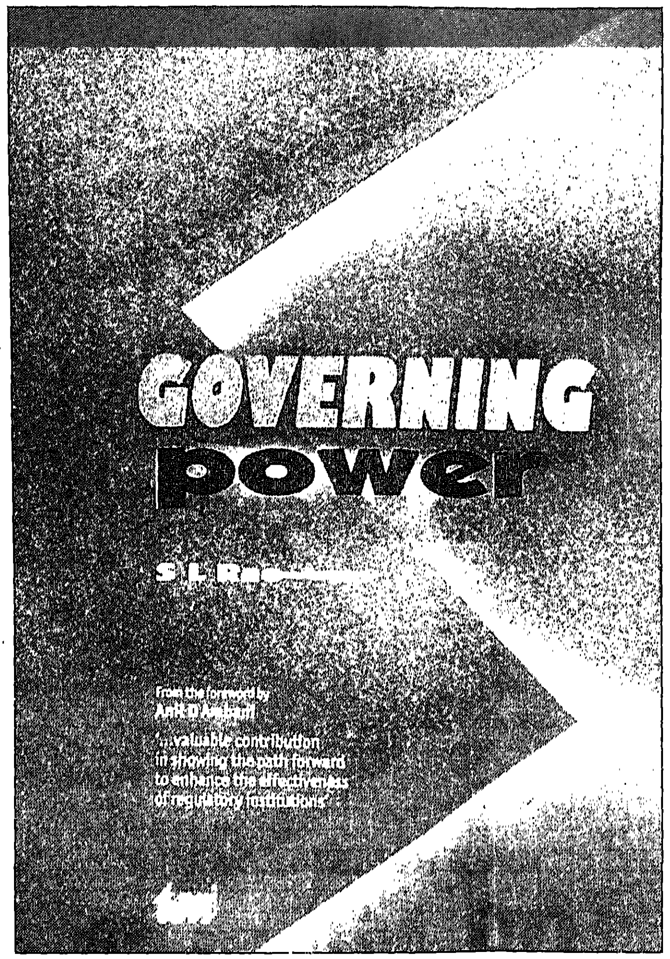
'Clear policies needed'

Unless the Government comes out with clear policies to reduce the use of fossil fuels through massive investments in public transport and renewable energy, proper incentives to market forces and punitive taxation on greenhouse gas contributors the situation will only worsen in the years to come, Dr. Pachauri said.

He warned that the present boom in the car market would "lock" the country into an excessive dependence on carbon intensive transport and severely weaken its energy security.

BOOK REVIEW

Power regulatory reforms


GOVERNING
power
S L Ra
From the foreword by
...valuable contribution
in showing the path forward
to enhance the effectiveness
of regulatory institutions

GOVERNING POWER — A New Institution of Governance — The Experience with Independent Regulation of Electricity. S. L. Rao; TERI Press, Darbari Seth Block, Habitat Place, Lodhi Road, New Delhi-110003. **Rs. 580.**

UNTIL THE 1970s most countries viewed the electric utility industry as a vertically integrated natural monopoly because of economies of scale in generation and the need for avoiding duplication of facilities in transmission and distribution. All countries preferred either a public monopoly or a private monopoly subject to price and service regulations. The monopoly status enabled these countries to supply electricity at reasonable prices and to achieve universal coverage.

Supply reform models

By the mid-1970s it was realised that some electricity markets could support more than one firm, and the dynamic efficiency gains by opening up segments of the industry to competition might exceed the alleged benefits of monopoly. This book documents the international experience regarding different reform models relating to electricity supply and their relevance to India.

India's experience in operating the vertically integrated statutory monopoly since 1948, while partially successful in achieving coverage, revealed many drawbacks — persistent excess demands, technical inefficiencies, poor quality of power and huge financial losses to State Electricity Boards (SEBs). Recognising the need for attracting private investment in the power sector and to improve efficiency in electricity supply, the Government of India initiated reforms in 1992.

In 1998 the Electricity Regulatory Commissions Act was passed to facilitate the establishment of the Central Electricity Regulatory Commission (CERC) and the State Electricity Regulatory Commissions (SERCs). The Electricity' Act, 2003 provides the legal framework for the operation of India's electricity supply system in a competitive environment.

The Indian model

The book focusses on the design and functioning of the CERC and the SERCs as new institutions of governance. Rao notes that an independent regulatory agency can handle complex matters, react to new circumstances more quickly and better equipped for dealing with political or controversial decisions. He lists the following characteristics of such an agency — autonomy, accountability, popular participation, efficiency, predictability, transparency and judicial control.

Rao's evaluation of the functioning of the CERC and the SERCs reveals that these new institutions have not been effective in achieving the goals of economic efficiency, promoting competition, attracting desired levels of private investment and improving the financial viability of the SEBs.

Based on a survey conducted by Prayas Energy Group in 2003, he reports that many states have not given the full powers under the Act to the commissions.

The composition of the commissions is heavily biased in favour of IAS officers and retired staff members of SEBs. Most staff members are on deputation and their professional skills are limited.

He attributes the weakness of the commitment to handing over of government powers to the CERC and the SERCs and the subsequent rocky relationships between many state governments and the SERCs to the imposition of the idea of independent regulatory commissions from outside.

Cost benefit analysis

Rao is concerned about the poor quality of information about capital and operating costs, transmission and distribution (T&D) losses and projected demands given by the SEBs to the SERCs. The existing cost data of the SEBs conceal both technical and allocative inefficiencies.

Further, the estimates of subsidies for agriculture and domestic categories are based on the differences between the unit cost for the system as a whole and the average revenue realisation for the particular category.

As the unit costs of serving the two categories are far above the unit cost for the system as a whole, the subsidy estimates are biased downward. Hence, the estimates of cross subsidies are also biased.

With private entry and market orientation it is necessary to use current economic costs rather than historical costs and carry out a disaggregated normative cost analysis. This type of costing exercise will help in evolving a rational tariff, measurement of subsidies and cross subsidies in existing tariff and cost benefit analysis of trade-offs among policy options.

Recommendations

As electricity is a basic need, government has an obligation to provide electricity to poor households and users in rural and remote areas at reasonable prices. In the new system of governance, state governments can achieve equity and rural development goals by identifying the customer categories deserving subsidy, prescribing the extent of subsidy to each category and releasing the subsidies to the service providers on the basis of performance norms.

The timing of and the extent of tariff revisions should be left to the SERCs. This policy will help in achieving the social goals in a transparent manner and reduce the political uncertainty.

This book reflects the author's rich experience as a professional manager, renowned applied economist and the first chairman of the CERC. It contains valuable information about the structure and the functions of independent regulatory agencies in India and abroad. The last chapter identifies directions for change to achieve the expectations from the regulatory agencies.

U. SANKAR

‘Power to shop anytime, anywhere’

A cross-section of Delhiites cheer policy, say it’s in tune with the rest of the world

EXPRESS NEWS SERVICE
NEW DELHI, AUGUST 31

IE 1/9

FOR a city that virtually goes to sleep at sundown, the Delhi government’s decision to give it a nightlife has received loud applause from the residents.

Nanki Mann, research associate with The Energy Research Institute (TERI) thinks it’s a good decision on the government’s part. “It gives us the power to shop anytime, anywhere. Work hours are no longer 9 am to 5 pm and that leaves few with time to shop. This is a welcome step.” Mann added: “If foreign countries can have 24-hour malls, why can’t we?”

> **“This move is good for the high-end shopper and will also ensure that police extortion stops”**

Dr Anupam Sibal, medical director, Indraprastha Apollo Hospital, agrees with Mann. “The decision is in keeping with international rules for markets. Stores in England and Europe are open till 11 pm. Same is the case in US where stores remain open overnight...This is one of the best things to have happened to Delhi since most people don’t have a 9-to-5 job. Besides, now Sundays can be kept for things other than shopping.”

> **“Profits will go up if the shops in Connaught Place remain open late”**

Aparna Kumar, a merchandiser, feels it’s a great relief specially for those who work till late in the evening. “This is just what I wanted. I otherwise end up shopping on weekends and on those days places like Connaught Place are shut. At least now I will manage to do my shopping on regular days,” she added.

And though government grapples with complaints from the traders association, consumers are celebrating. Ripunjay Mehta, 23, investment banker and a resident of Defence Colony said from the consumer’s point of view, it’s the best news. “There are more jobs now which entail longer hours. This policy will allow them to shop after work as well...Besides, Delhi’s nightlife needs to wake up,” said Mehta.

Shop-owners too are enthusiastic. In fact Ebony, the South Ex-II shopping mall, is already planning a three-day trial to test the viability of the new timings.

Ebony’s manager operations, Gaurang, said: “As soon as possible we will test the new shopping hours. This move is good for the high-end shopper and will also ensure that police extortion stops.”

“Profits will go up if the shops in Connaught Place remain open late,” says Charanjeet Lal of DV8. Sonam Sherpe, manager, Ching Win restaurant and bar at Lajpat Nagar, adds: “Business will look up. Also, alcohol sales will definitely increase since night hours are the best time to sell.”

THE HINDUSTAN TIMES 1 - SEP 20

Close to Nature

Environment is a hot and happening sector that offers a host of career opportunities. VARUN SONI reports

PHOTOS SUSHIL SOORMA

Coming from the small town of Narsinghpur in Madhya Pradesh, Yogesh Ghore was looking for practical solutions to the kind of environmental problems he had witnessed in and around his hometown. And because he desperately wanted to change things for the better, Ghore went on to do a post-graduate diploma in Forest Management from the Indian Institute of Forest Management in Bhopal, after completing his engineering degree from the Government Engineering College, Raipur. To improve his management and analytical skills, Ghore also enrolled for a Masters in Public Administration in Environmental Science and Policy from the Columbia University, New York.

Ghore is not an exception. These days, a large number of students are opting for environment as a career option. Even a decade ago, not many had heard about a course in Environmental Economics at the post-graduate level. However, times are achanging and this is evident from the fact that a lot of schools and colleges have environment on the curriculum.

Such is the impact of environment on the human mindscape that even children talk about it, urban planners take it into consideration while drawing up a new project; industries are made more conscious about it and citizen's groups are vocal about protecting the greenery. Environment, therefore, offers enormous scope!

Says Bangalore-based environmentalist, S. Vishwanath, "We have at last realised that the mismanagement of our natural resources and the pollution of the eco-system can spell ruin for the human race. Hence, preserving the environment has become important and as a career option, it will grow in geometrical proportion in time to come."

Adds Dr. Mukesh Khare, Professor, Civil Engineering Department, Indian Institute of Technology (Delhi), "Growth is always related to the needs of society. When people face environmental problems like air and water pollution, solid waste management, scarcity of ground water, then and only then will the spotlight shift to environment, with institutions giving due importance to the subject. This is true globally."

Opportunities

Market research firm BTI Consulting estimates that the global market for outsourced environmental services is over US $850 million. It has further estimated that there exists a US $4.1 billion market for environmental management information systems, including US $42.6 billion in professional services, US $640 million in software and US $440 million in the Internet services. In fact, the market opportunities in the environmental management information systems are expected to touch US $46 billion, with the growth rate being more than 10 per cent a year.

Considering the growth rate, professionals in fields like forestry, marine biology, water and energy management are poised for good times. As far as opportunities available in this field are concerned, Vishwanath says, "From ecological architecture, bio-diversity mapping, land and soil management to road development, environmental impact assessment, ISO 4001, water harvesting and watershed management, air pollution mitigation and resource management in industries, the list is endless."

Apart from getting jobs in government agencies like the Central Pollution Control Board (CPCB), students can also either get into the private sector (basically with companies engaged in infrastructural projects) or work independently as environment consultants. Says Professor Dulal Goldar, former Principal, Delhi College of Engineering (DCE), "Environment basically deals with training students in finding solutions to problems plaguing nature. For instance, finding solutions to the problem of water shortage is the duty of the environmental engineer. With environmental clearance becoming mandatory for companies taking up infrastructural work in India, the demand for professionals in this field is bound to increase."

Enumerates Venkatesh Dutta, who is doing his Ph.D. in this field, "A person with a post-graduate degree in environmental sciences can start his/her career with NGOs as a project manager/research associate. He can also work for consultancy organisations like RITES, CES, EIL, TERI as an environmental manager. With more work experience, one can get job offers from multilateral agencies like UN, World Bank etc. Some government departments and PSUs have also started taking in persons with an M.Sc. in environmental sciences."

Courses

Many colleges offer a three-year course in Environmental Science. Engineering colleges offer specialisation in Environmental Engineering. If you have a basic degree in biology, agriculture, microbiology or forestry, you can get a job in the field of environment. Another area of specialisation is Environment Management.

Says Dutta, "There are more than 25 universities in India that offer M.Sc. courses in Environmental Sciences. Some colleges in the Delhi University offer the subject at the graduate level as well. Apart from these, there are a number of premier engineering colleges that provide courses in Environmental Engineering at both the Bachelor's and Master's levels, such as the Delhi College of Engineering."

Adds Dr. B. C. Barah, Principal Scientist, National Centre for Agricultural Economics and Policy Research (ICAR), "Environment is a multi-disciplinary subject involving Biological Sciences, Engineering Science, Socio-economic Sciences, Mathematics, Ethics and History. To be an environmentalist, one needs to have an inclination for the subject. This is in fact more important than the academic background."

How should students prepare?

Apart from being a good communicator, a student must possess technical skills to be able to make it big in the field of environment. Says Dr. Barah, "If a student wants to enter this sector, it is important that she takes an interest in environmental issues. She should be prepared to undertake arduous tasks."

Adds Vishwanath, "The student must first decide which sector of work appeals to him the most. What is his interest? Where does he want to develop his skills? Is it forest management or is it related to water? Scout for some professionals in the field, talk to them and most of all, go through the Internet."

A note of caution: "One should enter the field after ser
tion. The reason behin
initial remuneration c
Rs 5,000 per month,
promises fast growth,
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With opportuniti
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Institute

- **Delhi University**
- **TERI**
- **School of Environm Management at Indra University, Delhi**
- **Ranchi University**
- **IIT Bombay**
- **Calcutta University**
- **University of Kalyan**
- **Vidyasagar Universi Midnapore**
- **University of Burdw**
- **Jadavpur University**
- **Indian Institute of So and Business Manager**
- **The Sea Explorer's I Kolkata**
- **Institute of Environ Management and Pla (IEMPS), Vikram Univ (M.P.)**
- **Indian Institute of E Managemnt, Navi Mu**

The list is not exhaustive
For further information l
www.envindia.com

Industrial Stalwarts In Raje's Think-tank

SANJAY THAPA
Jaipur, Sept 14

In a bid to give a push to economic reforms in Rajasthan, a 31-member group comprising economists and industrial stalwarts met on Tuesday for a maiden session of the Economic Policy and Reforms Council (EPRC).

Constituted by chief minister Vasundhra Raje, the 'think-tank', which includes ITC's Yogi Deveshwar, NEI's CK Birla, Lalit Kumar Modi of Modi Enterprises, DCM Shriram's Ajay Shiram, TERI's RK Pachauri and NIPFP's Indira Rajaraman, will undergo a two-day brainstorming session in order to formulate a policy strategy, which would then go into the framing of a 'Vision Document' for the state. It will target six areas of economic development to help the state government accelerate economic reforms and policy making.

The six areas before the EPRC include: Policy planning for resource mobilisation, improvement of resources utilisation in various economic sectors, planning for long-term investment policies, including that of public-private partnership, and to suggest measures to develop the economic infrastructure in the state. It will also focus on good governance and bringing about fiscal reforms in the state.

Other areas include resources identification for employment generation, poverty alleviation, crop insurance, consolidation of the tourism sector, increasing credit availability and technological upgradation.

In the area of road, power and water sectors, the state government plans to increase private sector participation. For instance, the ambitious road project aims to increase private participation through the BOT route.

In the power sector too, the government plans to implement a new power act.

At the meeting, Ms Raje said that there would a special emphasis on the development of human resources by creating capabilities as well as filling up social infrastructure gaps.

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Green buildings catching on

The green movement is spreading and an increasing number of people are reaslising its advantages, writes Sanjay Kr Singh

AT the Retreat, Teri's (The Energy & Resources Institute) residential training centre at Gual Pahari (on the Gurgaon-Faridabad road), executives belonging to a leading FMCG company have gathered for a weeklong training session. It's a hot, sultry day in May. But inside the conference hall it's remarkably cool though no air-conditioners (or their vents)are visible. And no tubelights have been switched on: there is adequate natural light inside. As the delegates take their seat, they learn why: a short film tells them that they are sitting inside one of the few truly 'green' buildings in this part of the country.

The green building movement has had an auspicious start in India. The CII Godrej Green Business Centre at Hyderabad received the highest platinum- rating from the US Green Building Council Gradually interest is building up. TERI, which has done a lot of work in the area of creating a sustainable, low energy consuming built environment, has worked (or is working) on the following green projects: the CII-GBC building, the ITC Corporate Excellence Centre in Gurgaon, the North Delhi Power Corporation building, a building in IT Kanpur, a green housing complex in Calcutta, and so on.

WHAT'S A GREEN BUILDING? A green building is one that uses up minimum natural resources both during the construction stage and during its lifetime. Mili majumdar, Fellow and Area Convenor at the Centre for Research on Sustainable Building Science, TERI inform, "you need to do a lot at the design stage itself to lower the amount of energy that a building will consume".

Take into account the climatic zone. The first thing architects need to do is to design the building according to the climatic zone it is located in. India has six climatic zones. For a very hot climate, as we have in the capital and its surroundings, you need to prevent too much heat gain by the building. You can achieve this by sizes. Keep the number of windows in the east and west to the minimum (though many people want a lot of windows in the east) because the sun appears at a very low angle in these directions and the heat penetrates deep inside. North is the best direction for having a lot of windows since you do not get much daylight in this direction. In the south, on the other hand, you get a lot of sunlight during summer. So if you have windows in this direction, they need to be properly shaded.

Other things architects do to prevent heat gain include shading the walls with trees and insulating the walls and the roof. They also install solar chimneys and wind towers to maximise ventilation.

Through the right orientation of the building and by having the windows in the right direction, you also reduce the need for artificial lighting inside the rooms during daytime.

Next, architects have to take into account the micro climate of the site. The site would have its own topography, vegetation, wind flow patterns, and direction in which sunlight falls during the different seasons of the year.

IN THE LAP OF NATURE

The design of the building must harness all these conditions and use them in such a way that the cooling, heating and lighting requirements are minimised. Thus, at stage one itself the design stage you reduce the amount of energy that the building will consume.

The architect and his team must coordinate with the other consultants and service providers so that the green objectives of the building are not diluted.

For instance, the landscape designer might come up with a plan that uses many exotic plants. But these may require a lot of water. The architect will have to prevail upon the latter to use only those plants that require minimum amount of water.

Further, the initial plan may have a lot of lawn area. But that would again require a lot of water. In a water scarce area, the design will probably have to be altered. It's not good enough to go in for water harvesting on the one hand, but waste water elsewhere or have features that consume a lot of water.

INTERIOR DESIGN ELEMENTS: Here's a tip that will reduce the need for artificial lighting inside the building. The lights near the windows should be on a different circuit than those further inside the building. That way if a workstation near the window receives adequate sunlight during the day, the person working there willbe able to switch off his lights. But often all the lights are on the same circuit, so you can't switch them off even though you may not need them.

By using fewer lights, you also reduce the load on the air-conditioning system because lights give off heat. You should use energy efficient lamps and tubelights that have lower wattage.

THE RIGHT MATERIAL: In the construction of the building the builders must use low-energy materials, like fly ash. The next thing to do is to install renewable energy sources like solar panels that generate electricity for lighting, heating water, etc. Installing these equipments can be expensive initially but they lower your electricity bill and more than recoup your investment over the long run. You also need to install a system for purifying waste water.

Where's the power?

SUNIL JAIN

S L Rao
TERI Press
Price: Rs 580
Pages: 484

GOVERNING POWER

Over four years ago, when everyone thought Enron's Dabhol power plant was the epitome of consumer deception, the Central Electricity Regulatory Commission (CERC) found that state-owned NTPC was fleecing consumers to the extent of Rs 800–1,000 crore a year.

The CERC found that while old guidelines in the power sector gave companies a huge incentive payment if they operated their plants at above 68.5 per cent capacity, NTPC's plants had been operating at over 76 per cent for years. So S L Rao, who headed the CERC in those days, argued that there was no reason for it to get these incentive payments, and raised the bar for NTPC's incentives to around 76 per cent—if it achieved a higher utilisation, NTPC would then get an incentive. Naturally, with the easy money gone, there was tremendous opposition, from NTPC and even within the government. But Rao stood his ground since he thought that was his job as an independent regulator.

For those who thought this was just the beginning, that independent regulators would stand up for the rights of the consumers and fix the mess in the power sector, there's been quite a rude shock. Several years later, as Rao's fascinating research into the brief history of so-called independent power regulators in the country shows, things have deteriorated significantly. Indeed, at an "open house" on allowing more competition in the power sector that I attended a few weeks ago, Rao's successor A K Basu asked various state electricity regulators why they were delaying the introduction of competition through "open access"—allowing competing suppliers to carry their power to a customer's premises on the wires owned by another company. The stock answer Basu got was that "the state governments are opposing it and the state electricity boards are not even giving us the data we need to come up with our orders"!

To be sure, as Rao notes, the Electricity Act 2003 does provide the CERC more powers in terms of being able to direct state electricity regulatory commissions (SERCs), but the overall situation remains one of the government refusing to let go. As a result, since there is virtually no competition in the sector even today, this is the only area in the country where, despite the reforms, prices have gone up steadily. Rao cites a study done by the Prayas Energy Group that shows that just nine of the 19 chairmen of various SERCs have completed their full five-year terms, 15 of 21 chairmen of various SERCs have been either ex-IAS officers (10) or officers from various government-run power utilities—if you include members and the secretary of the SERCs, just 10 of 66 staffers have come from the judiciary and the private sector!

Apart from this very obvious control that has, sadly, been perpetuated in the Electricity Act in an insidious manner, various state governments have been a lot more brazen about wielding their powers. The Karnataka ERC's tariff order of 2002, Rao says, was simply suspended by the government, NTPC withheld information on operational parameters from the CERC in the case referred to earlier, and in Delhi the government simply privatised the electricity board and agreed to certain terms that the regulator is not even entitled to go into! While the CERC is supposed to decide on inter-state tariffs, the Draft Tariff Policy lays down returns and other operational parameters that infringe on the CERC's jurisdiction. Indeed, the Electricity Act 2003 allows the government to give directions to the CERC or the SERCs on matters "in the public interest".

Since the "public interest" can and will be interpreted quite liberally, what hope is there for the power sector? It's pretty clear, for instance, that despite ERCs being in existence for over five years in several states, they have made little difference since transmission and distribution losses haven't come down. Of course, while the states haven't really empowered the regulators (the book has a section that details just how much power has been delegated by various state governments to their SERCs), a large part of the fault is also theirs, since they're not being pro-active. "If the state electricity boards don't give you data," Basu had to remind regulators in the open house, "just give them a cut-off date, and then pass your order without their inputs."

While the government retains control over the electricity regulators, the latter haven't quite distinguished themselves either

Whether they will, however, will depend on not just them but also on how private players go about their business. In the telecom sector (where regulatory experience in the country has been the longest), the government dismissed the regulator when he was confrontationist, got "an almost subservient one ... in the intermediate years" to quote Rao, and then got one who "appears to have the confidence of the minister". But yet, Rao notes, the structure of the industry changed dramatically. Why? The reason, Rao doesn't state, is that the private players decided to really take on the government, through high-profile court cases and public confrontation, and that's how they got even a limited level playing field. Until this happens in the power sector, little is going to change.

TERI programme for schoolkids

It's an attempt to create awareness about the value of water resources and also fortify the future by educating schoolchildren. In this joint initiative of The Energy and Resources Institute and Agilent Technologies, about 7,000 schoolchildren from 15 schools in Gurgaon are being taught the importance of water resources.

"We are trying to give the children hands-on experience by letting them actually test water samples and helping them get a clearer view of the importance of protecting water resources," said G. Ramakrishnan, vice-president (Life Sciences and Chemical Analysis), Agilent Technologies India Pvt Ltd. *ENS*

CHERIAN THOMAS

High-power Group To Develop Rajasthan

SANJAY THAPA
Jaipur, Sept 17

A die-hard committment for power sector reforms as well as encouragement of private-public partnership in infrastructure sectors was the path to ushering in a new phase of economic development in Rajasthan.

This was the general conclusion at the end of a two-day brainstorming session of the Economic Policy Reforms Council (EPRC) 'think tank'. The council includes industry leaders like ITC's Yogesh Deveshwar, CK Birla, Lalit Kumar Modi of Modi Enterprises, DCM Shriram's Ajay Shiram, TERI's RK Pachauri, Indira Rajaraman of NIPFP, Modi Enterprises chairman Lalit Kumar Modi, Ravi Parthasarthy, vice-chairman, ILFS, RBI's VR Vyas and Urjit Patel, chief policy officer, IDFC.

Rajasthan chief minister Vasundhra Raje, who heads the council, said that her government was committed to bring out a policy to this effect by the end of the year. ◆

BIOFERTILISER WITH WIDE APPLICATIONS DEVELOPED

A Global First From Teri Stable

SUDHIR CHOWDHARY
New Delhi

In a major technological breakthrough, researchers at The Energy and Resources Institute (Teri) have developed a technology—a global first—to mass-produce a consortium of mycorrhiza (microscopic fungal microbe) biofertiliser. The biofertiliser, patented by Teri, acts multi-purpose and multi-faceted—it is a soil conditioner, bio-remediator and bio-control agent and has wide applications in agriculture, economic plantations, horticulture, forestry and bio fuels.

The technique has been adopted by two leading pharma and agro-based companies, Cadila Pharmaceuticals Ltd, Ahmedabad, and KCP Sugars and Industries, Hyderabad. Teri is now set to transfer this technology overseas. It will soon sign an agreement with a Canadian biotechnology firm for technology transfer and contract research.

There's more, said Dr Alok Adholeya, head of the research team at Teri's Bioresources and Biotechnology division. "The technology has shown immense potential in reclamation of stressed ecosystems like fly ash dumps, alkali chlor sludge, distillery effluent loaded site and other man-made wastelands."

- **Teri researchers develop fungi-based biofertilizer**
- **It has applications in agriculture, horticulture and forestry**
- **Enhances nutrition and yield increment up to 50 per cent**
- **Technology transferred to two Indian firms for production**
- **Agreement with Canadian firm for tech transfer planned**

Recently, President Dr APJ Kalam conferred on Dr Adholeya the ministry of science and technology's biotech product and process development and commercialisation award for 2004 for his research on mycorrhiza technology.

Dr Adholeya told jieFEjr: "Our research focused on the mass-cultivation of a consortium of mycorrhiza (arbuscular mycorrhiza or AM) on semi-synthetic medium under sterile environments. Though mycorrhiza is a naturally-occurring fungi found in most soil types, excessive and incessant use of chemical fertilisers, insecticides, etc, has had an adverse effect on this organism."

"Unregulated use of these, over the years, has deteriorated the natural regeneration ability of soil and degraded its soil structure, the environment and therefore, food quality. As a result, agriculture-intensive economies suffer from saturated and polluted soil, and wastelands amidst an ever-increasing demand for food production," he added.

Teri's mycorrhizal consortium is a technological innovation, Dr Adholeya said, with multiple organisms as against its earlier version that contained a single species. The consortia technology offers improved and multi-faceted benefits in plant production systems. "Field trials have revealed that it enhances nutrition and yield increment up to 50 per cent and curtails chemical fertiliser inputs by 5-25 per cent," he said.

Mycorrhiza has also proven, through field trials conducted by Teri, that fly ash dumps, mined out areas, sites affected by industrial affluent, oil refineries and chlor alkali sludge can be reclaimed for vegetation.

Continued on Page III

Continued from Page I

"Heavily loaded sites—the Badarpur Thermal Power Station, Delhi, the Korba Super Thermal Power Station, Chhattisgarh, and the Vijayawada State Thermal Power Station have been completely cured," he said.

According to Dr Adholeya, reclaiming one hectare of fly ash dump using Teri technology costs Rs 90,000. This includes the cost of field preparation, nursery raising, mycorrhiza innoculation, grass bed preparation and maintenance up to one year.

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Where's the power?

SUNIL JAIN

S L Rao
TERI Press
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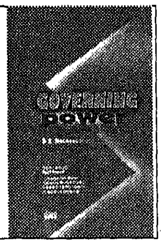
GOVERNING POWER



Over four years ago, when everyone thought Enron's Dabhol power plant was the epitome of consumer deception, the Central Electricity Regulatory Commission (CERC) found that state-owned NTPC was fleecing consumers to the extent of Rs 800–1,000 crore a year.

The CERC found that while old guidelines in the power sector gave companies a huge incentive payment if they operated their plants at above 68.5 per cent capacity, NTPC's plants had been operating at over 76 per cent for years. So S L Rao, who headed the CERC in those days, argued that there was no reason for it to get these incentive payments, and raised the bar for NTPC's incentives to around 76 per cent—if it achieved a higher utilisation, NTPC would then get an incentive. Naturally, with the easy money gone, there was tremendous opposition, from NTPC and even within the government. But Rao stood his ground since he thought that was his job as an independent regulator.

For those who thought this was just the beginning, that independent regulators would stand up for the rights of the consumers and fix the mess in the power sector, there's been quite a rude shock. Several years later, as Rao's fascinating research into the brief history of so-called independent power regulators in the country shows, things have deteriorated significantly. Indeed, at an "open house" on allowing more competition in the power sector that I attended a few weeks ago, Rao's successor A K Basu asked various state electricity regulators why they were delaying the introduction of competition through "open access"—allowing competing suppliers to carry their power to a customer's premises on the wires owned by another company. The stock answer Basu got was that "the state governments are opposing it and the state electricity boards are not even giving us the data we need to come up with our orders"!

To be sure, as Rao notes, the Electricity Act 2003 does provide the CERC more powers in terms of being able to direct state electricity regulatory commissions (SERCs), but the overall situation remains one of the government refusing to let go. As a result, since there is virtually no competition in the sector even today, this is the only area in the country where, despite the reforms, prices have gone up steadily. Rao cites a study done by the Prayas Energy Group that shows that just nine of the 19 chairmen of various SERCs have completed their full five-year terms, 15 of 21 chairmen of various SERCs have been either ex-IAS officers (10) or officers from various government-run power utilities—if you include members and the secretary of the SERCs, just 10 of 66 staffers have come from the judiciary and the private sector!

Apart from this very obvious control that has, sadly, been perpetuated in the Electricity Act in an insidious manner, various state governments have been a lot more brazen about wielding their powers. The Karnataka ERC's tariff order of 2002, Rao says, was simply suspended by the government, NTPC withheld information on operational parameters from the CERC in the case referred to earlier, and in Delhi the government simply privatised the electricity board and agreed to certain terms that the regulator is not even entitled to go into! While the CERC is supposed to decide on inter-state tariffs, the Draft Tariff Policy lays down returns and other operational parameters that infringe on the CERC's jurisdiction. Indeed, the Electricity Act 2003 allows the government to give directions to the CERC or the SERCs on matters "in the public interest".

Since the "public interest" can and will be interpreted quite liberally, what hope is there for the power sector? It's pretty clear, for instance, that despite ERCs being in existence for over five years in several states, they have made little difference since transmission and distribution losses haven't come down. Of course, while the states haven't really empowered the regulators (the book has a section that details just how much power has been delegated by various state governments to their SERCs), a large part of the fault is also theirs, since they're not being pro-active. "If the state electricity boards don't give you data," Basu had to remind regulators in the open house, "just give them a cut-off date, and then pass your order without their inputs."

While the government retains control over the electricity regulators, the latter haven't quite distinguished themselves either

Whether they will, however, will depend on not just them but also on how private players go about their business. In the telecom sector (where regulatory experience in the country has been the longest), the government dismissed the regulator when he was confrontationist, got "an almost subservient one ... in the intermediate years" to quote Rao, and then got one who "appears to have the confidence of the minister". But yet, Rao notes, the structure of the industry changed dramatically. Why? The reason, Rao doesn't state, is that the private players decided to really take on the government, through high-profile court cases and public confrontation, and that's how they got even a limited level playing field. Until this happens in the power sector, little is going to change.

6 THE HINDU, Friday, September 10, 2004

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HYDERABAD

INTERNATIONAL MEET ON CLIMATE CHANGE

Scientific collaboration between India, EU stressed

By Our Staff Reporter

K. Harinarayana V-C, Hyderabad Central University, R.K. Pachauri Director General, TERI and Anver Ghazi, Advisor, Earth Observation Centre, European Commission in Hyderabad on Thursday.
Photo: Satish H.

HYDERABAD, SEPT. 9. The five day international workshop on 'Climate Change and Natural Disasters' being held at the University of Hyderabad (UoH) will conclude on Friday with a joint statement listing areas of common interest and action for the scientists and Governments of India and Europe.

Recommendations

Speaking to reporters here on Thursday, the UoH Vice-Chancellor, Kota Harinarayana, said a slew of concrete recommendations would be presented at the conclusion of the deliberations to the Government of India as well as the European Commission (EC).

The EC representative, Anver Ghazi, stressed India's tremendous potential for scientific cooperation and expressed happiness that the workshop had identified many such areas like climate change modelling, floods, forest fires and drought.

India could be a valuable partner in the African monsoon multi-disciplinary analysis project, which is trying to devise an advanced model for the Indian Ocean monsoon. India can also contribute through satellite imagery in which Indian expertise was "second to none", he said.

Dr. Ghazi, who heads the EC's Global Change Research Unit and is Advisor to EC's Earth Observation Centre, said India and the EC can also collaborate on implementation of Kyoto Protocol and the UN Convention on Combating Desertification.

Earlier, R.K. Pachauri, Director-General, The Energy and Resources Institute, New Delhi, gave a lecture on climate change.